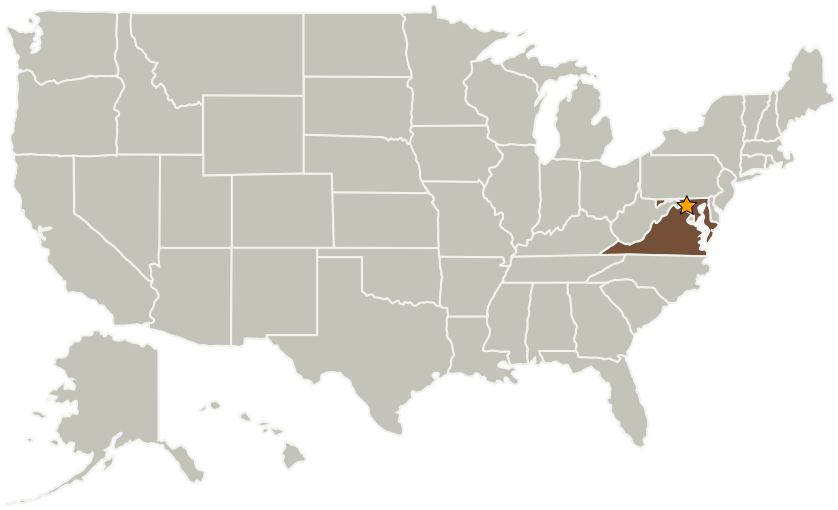
Many Manufactured Nanosats, Phase I

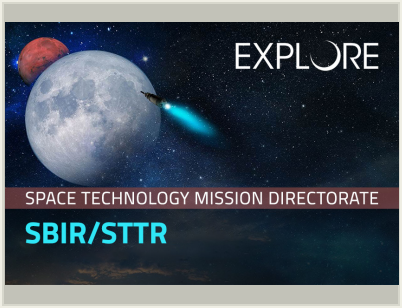
Completed Technology Project (2004 - 2004)

Project Introduction

To achieve the capability to affordably produce scores of nano-spacecraft for envisioned constellation missions, a new manufacturing process is needed to reduce the time and cost of fabricating and testing the nanosats. However, to achieve substantial savings, a fundamental paradigm shift in how spacecraft are built must be made. Current spacecraft are built with the same processes and procedures used in the 1960?s, whereas electronics technology has gone far beyond that of the early days. So while the size of satellites has steadily decreased, the manufacturing time has not experienced similar reductions. Given that labor to build a satellite remains the single largest element of cost, the opportunity remains to dramatically shorten program schedules and lower cost through the infusion of new techniques and innovative processes in the construction of structures, electronics, harnessing and most importantly the testing process. AeroAstro proposes to set aside the conventional rule book and explore a broad range of Design for Manufacture material and process innovations that could lead to a dramatic shortening of the micro/nano-satellite manufacturing timeline with concomitant savings in unit manufacturing cost.

Primary U.S. Work Locations and Key Partners





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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
AeroAstro Corporation	Supporting Organization	Industry	Ashburn, Virginia

Primary U.S. Work Locations	
Maryland	Virginia

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Joel Pedlikin

Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  - TX12.4 Manufacturing
    - TX12.4.1 Manufacturing Processes